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Influences of Scenario Based Training on the Sympathetic Nervous System

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ABSTRACT

This paper explores the need for training methods for critical incidents to be reformed to include more scenario, or situational, based training methods to be utilized during the development of officer's skills. Historically, this training is primarily taught in a classroom setting, by demonstrating a technique which is then mimicked by the officer, usually with a partner, in a static setting. While this method does allow a student to develop a skill, it does not put it to use in a real-life setting that will have variables and factors that can be understood by the student. These variables, or outside influences, can cause the student to lose confidence or abandon the learned procedure, thus causing an improper use of technique. This failure, or perceived failure, can cause an increased activation of the sympathetic nervous system, which can ultimately lead to panic and possibly an unjustified action by the officer. This paper reviews scholarly literature in the form of peer reviewed journals, prominent law enforcement journals and books to evaluate the need for the addition of this type of training. The research finds that by using additional scenario and situational based training methods, officers are able to experience the application of a skill in a more realistic setting and can possibly decrease the effects of the activation of the sympathetic nervous system.

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INTRODUCTION

Law enforcement agencies across the country should be utilizing scenario based training. Scenario based training allows an officer to problem solve and communicate during the incident, training them to think through a situation rather than just react, as taught in a classroom. Police officers have a unique profession. It has been described as extreme bouts of boredom interrupted by small bouts of terror. This paper will examine how police officers can be trained to minimize the effect the sympathetic nervous system has on the mind and body. Identifying these effects, coupled with the knowledge of how the human body naturally reacts, is paramount to starting any evaluation into the methods of training or knowledge acquisition. Scenario based training affirmatively answers the questions of whether there are methods available to train or condition an officer to these effects and whether these effects can be controlled or mitigated to lessen the effects of exposure during critical incidents.

Evolution of mankind has instilled the “fight or flight” response as a human reaction to danger. That response can be built upon to assist in decision making processes used by officers (PPCT, 2005). In law enforcement, the natural instinct to flee may not be a viable option and thus causing a battle, not only with the incident, but with the instinct that has become hard-wired into a human’s system over years of evolution.

Franklin D. Roosevelt once said, “We have nothing to fear except fear itself.” This is a true but simplified statement. Fear is only one part of what is faced by those who continually put themselves at risk due to a profession. The toll of the constant activation of the sympathetic nervous system is also something to fear. Without the

knowledge of what is occurring, poor decisions can be made, as well as long lasting physical and mental issues. Police officers not only have to be able to control a critical incident but also the battle that will ensue inside their brain and all other parts of their body as they react to a perceived attack (Siddle, 1995).

Police firearms training has evolved over the years. In the past, officers simply stood in a line and fired a set number of rounds from varying distances. Currently, officers use the training philosophy of scan, asses the threat, and engage. Departments across the country spend the majority of training time on the use of firearms and training for critical situations. While this training is vital, and one that no officer wants to be forced to use (but all should be prepared to use), actual situations where this training would be implemented are rare. This is not a bad or misguided thought process, as liability exists from both the use of this training and the lack thereof. This research states that there should be critical situational training for officers for those situations officers find themselves presented with on a daily or weekly basis. In the same way firearms training has evolved, so too must critical incident situational training.

POSITION

Every person will react differently when faced with what is perceived as a critical incident. The U.S. Department of Health and Human Services ("Critical Incident," n.d.) defined a critical incident as "a traumatic event (or perceived life-threatening event) that has sufficient power to overwhelm an individual's ability to cope. Normal physical and psychological responses, occur which place considerable pressure on that person" (para. 1). When faced with a critical incident, a person's body will have certain reactions that are triggered by the sympathetic nervous system. The activation of the

sympathetic nervous system will trigger the “flight or fight” syndrome, which is an evolved process used by humans to defend themselves. The body will experience changes in the vascular system, such as vasoconstriction, which is the constriction of blood vessels that can cause increases in blood pressure (PPCT, 2005). Perceptional narrowing will also occur, altering the body’s sensitivity to the five basic senses of sight, sound, touch, taste, and smell. These senses will change depending on what the brain identifies as crucial to survival for the situation at hand. The brain uses these senses to gather information and will become more focused on the threat, heightening the senses it identifies necessary to confront that threat. The body’s adrenal glands will activate, increasing the heart rate by releasing epinephrine, and will activate other hormones that will be distributed in the blood flow (PPCT, 2005).

The optimum heart rate is a range where an officer can perform at their best. The optimum heart rate lies between 115 and 145 beats per minute. The inverted U law states that an officer is at optimum performance while they maintain the optimum heart rate. When the heart rate goes above this range, fine and complex motor skills deteriorate (PPCT, 2005). Fine motor skills can be described as those that use hand-eye coordination and hand dexterity, such as threading a needle or reloading a weapon. Complex motor skills are described as skills that require a series of muscle groups and movements in order to complete a task, such as handcuffing or taking a weapon from a holster. Gross motor skills are those skills which involve major muscle groups and simple actions, such as lifting an object or striking an object with a baton.

The most dangerous reaction to a critical incident is a mental state called hypervigilance. Hypervigilance occurs when an officer is stressed is to the point that

he/she freezes in place (Siddle, 1995). This state is caused by the officer facing the threat of imminent physical injury or death. This condition can cause an officer to panic and make poor decisions. In its most extreme form, hypervigilance can cause an officer to make no decision at all. When hypervigilance occurs and panic takes over, the officer is no longer using a cognitive thought process; he/she goes into a survival thought process, driven by fear (Siddle, 1995). There are several factors that can help an officer's performance during a critical incident: The officer's confidence obtained through training and experience in similar incidents; motor skill selection, using techniques that utilize gross motor skills and limit the number of responses to the incident; tactical breathing, which helps reduce the heart rate and can have a calming effect on the officer; and visualization drills, where the officer visualizes the incident and his/her response prior to encountering it, allowing him/her to mentally and physically prepare for an incident (PPCT, 2005).

In order for the items listed above to have an impact, officers need to be trained in a manner or method that would utilize these techniques. Developing confidence in a technique should be the instructor's primary goal. Confidence is gained by a two-step process: First, for an officer to gain confidence in the skill, the instructor must consider the learning speed of the officer as well as the perceived effectiveness of the skill by the officer. Secondly, the instructor must assist with the development of situational confidence by having the officer perform the skill during dynamic training or role playing (Siddle, 1995).

A common mistake that is made by instructors occurs by never allowing the officers to leave the static environment and never receiving the full benefit of the

experience. Officers may learn the technique but fail to gain the ability to apply it within a dynamic training environment. The officer needs to understand how the technique will function when utilized in a realistic situation (Siddle, 1995). Grossman (1995) stated "when a person becomes angry or frightened they stop thinking with their forebrain (the mind of a human) and start thinking with their midbrain (which is indistinguishable from the mind of an animal)" (p. xvii). He went on to say that to influence the midbrain takes stimulus response training, which will condition a person in a given situation to have the proper reaction; this training for the circumstance with repetition allows one to have an immediate response to the stimulus or situation faced (Grossman, 1995). Instructors need to factor a use for the technique and a realistic situation of when it should be used. Repetition of both the stimulus and the response is key. Bertomen (2009) stated, "the fact is a person's subconscious, precipitated by training, is faster than the person's conscious effort…the more times an officer is given a specific response to stimulus, the quicker the reaction time for the officer" (p.1).

In 2008, Arnetz, Nevedal, Lumley, Backman and Lublin conducted a study to see if, with the addition of mental skills and relaxation training, officers could reduce stress and improve their performance during a critical incident. The study was conducted using rookie police officers, utilizing a ten week imagery and mental skills training program versus training as usual. While officers performed relaxation techniques, they were shown images of stressful events routinely encountered in law enforcement. The officers then participated in a high-stress, realistic critical incident scenario, along with other officers who had only received the basic required training. The conclusion of the study revealed that those officers who had received imagery and mental skills training

were able to maintain a lower heart rate and complete the task properly. This study confirmed that when an officer gains training experience, to include real life stressors, the officer's reaction is lessened (Arnetz, Nevedal, Lumley, Backman, & Lublin, 2009).

When reviewing the training offered to police officers, the methods used are just as important as the subject matter. Instructors need to be aware of the various ways an adult can best receive, and retain, the information presented. Malcolm Knowles, who adopted the theory of "andragogy," the theory and practice of education of adults, made five main assumptions about learners as they mature: "they become increasingly more self-directed; they will accumulate experience useful as a learned resource; their motivation to learn is more job oriented; they expect the education material to have an immediate application; their readiness to learn becomes oriented to the developmental tasks of their social roles" (Werth, 2015, para.14). Werth (2015) stated that "often overlooked in traditional training are human relations, communication, conflict resolution, problem solving and decision-making skills. The skills that are vital to officers working in community policing" (para. 16). Furthermore, the emphasis on the practical application and design of lesson plan should be by the problem area instead of subject, since adults are more "problem centered" (Werth, 2015, para.16).

The Intercept Stabilize and Resolve (ISR) training system utilizes a training methodology that trains officers progressively, and with a variety of partners, in an effort to get acclimated to various body types and movements. The training progressively increases speed and resistance. This increase allows the officer to progress their learning of the techniques in realistic situations with realistic resistance from a variety of body types. The pressure on the officer during the scenario increases when the officer

must attempt to control a person trying to strike them. ISR Matrix International ("During wartime," 2014) stated "many traditional tactics look good in the academy but break down in the field against non-compliant, resisting and assaultive people" (para. 10-12). The teaching philosophy is to have realistic, resisting persons as opposed to the choreographed movements that are seen in many types of defense training applications. The training has to be applicable to differing movements, not in a specific manner or movement, to be effective ("During wartime," 2014).

Lieb (2012), who wrote *Principles of Adult Learning*, wrote that a student has to be motivated. Instructors can motivate the officer by several means. They can create open, friendly atmospheres to show instructor interest in student learning. The participant must be explained the importance of learning each objective, as well as the risk of not learning the objective. The higher the level of importance, the more stress should be placed on the participant. However, instructors have to be careful when using stress as a motivation or tool when learning. If it becomes too high, it may cause the participant to shut down or become a barrier to learning. Instructors should set a level of difficulty that challenges the participant, but not so high that it can frustrate or cause the participant to believe that the goal is not achievable. Instructors need to set tough, but achievable, goals when constructing the material and adjust them according to the skill level of the participant (Lieb, 2012).

Olson (1998) stated that the practice of realistic simulation offers one of the best ways to prepare officers to handle deadly force decisions. Dynamic training serves two purposes in improving the decisions officers make during deadly force encounters: First, it allows the officer to be placed in realistic situations with live persons who will think,

plan, move, use cover and interact as the training progresses; and second, it allows the officer to implement stress management techniques during the training with effective tactics and procedures during realistic encounters. The use of firearms specially equipped to fire cartridges filled with paint markers allows “hits” to be scored for effectiveness and also offers a slight pain stimulus for realistic training scenarios (Olson, 1998).

The research of Minjina (2014/2015) found that the decision making process used for determining the course of action in critical incidents is very important for performance, especially in terms of officer safety and level of force to be used. In such incidents, stressors increase the likelihood that decision makers will choose the first option they consider. Development and practical expression of mental skills involve the use of techniques, such as self-talk, tactical breathing and visualization. Mental skills development is made through a custom designed program that requires systematic and consistent training as well as practice and application of the techniques to attain the desired mental skills. Mental skills training is the primary prevention method utilized in operational stress management for law enforcement. The training for supporting the effective operational performance in extreme situations, due to the effects of survival stress, will assist officers in proper decision making. The research found that mental skills training supports optimal performance, not only in sports, but also in fields where critical stress incidents can occur (Minjina, 2014/2015).

In their research, the Force Science Institute (“Study of cops’ stress,” n.d.) utilized a deadly force video simulator placing officers in scenarios with the possibility of using deadly force. Their results showed that all officers involved, no matter the race or

gender, displayed varying degrees of stress markers depending on the scenario. Most of the officers (94%) were able to cope with the stress, while some did not address the threat, and a few had a negative reaction to the stress and could not function at all. The officer's breathing and heart rate was affected as the scenarios became longer and more intense. However, experienced officers were less affected by the visual and auditory distortion caused by the scenario. Depending on the intensity of the scenario, officers had issues seeing or remembering accurate information about their surroundings, as well as suspect(s) description and statements. Officers with more than five years of experience, or those who had prior exposure to simulator based training, demonstrated fewer inaccuracies when describing the events/suspect(s). The research also showed that after waiting 48 hours and having the officers complete a questionnaire relating to the incident, the officers' recollection of the incident improved from the initial description of the scenario. ("Study of cops' stress," n.d).

COUNTER POSITION

The concept of realistic, or scenario based, training is not new and is currently being utilized in specialized training courses. Some of the reasons it has not become common practice is because this method of training is time consuming, costly, and the number of students that an instructor can monitor or assess during the training is limited. This type of training and training structure is currently being used by ALERRT (2009). This training utilizes both a classroom and a scenario based curriculum. The program is a two day training course, with the first day held in a classroom allowing the students to learn the concepts. During the first day of training, only one instructor is utilized. All students are placed in a group setting and the pace of the learning is

monitored by the instructor. The second day consists of the students being broken up into small groups of four to five students per group. During this block of instruction, four instructors are used to monitor the progress of the students and only that group will be participating in the scenario. Those students not involved in a scenario at that time are kept in an area working with a fifth instructor to answer questions or debrief a completed scenario. In looking at the cost comparison, it is easily shown that the scenario based training day is much costlier in instructor manpower alone. While it is true that the scenario based portion of this training is costly, the effects of the stress on the officers can be monitored by instructors, watching for those who may have additional training needs. Another benefit is that the department is assured that the techniques learned are utilized by the officers. This also allows the officers involved in the training exercise to think through a problem and make sound decisions. The training may prove to be costly, but the reduction of liability for the department and well-being of officers and civilians make the cost worthwhile in the end (ALERRT, 2009).

A second issue with utilizing scenario based training is logistics and organization of the training provided. Most middle-sized and smaller law enforcement agencies have no on-site training centers and have to out-source this type of training. This is usually accompanied with a per officer price that makes it difficult to have officers trained in similar skill sets. If an agency does have an instructor at the agency, the problem then becomes the lack of a location and needed accessories to utilize realistic training. In the past, law enforcement training was structured in a more “military” style, where the student learned a response with little individual interpretation. These lessons are facilitated with the traditional lecture based training which provides the student with the

content of the lesson and an idea of how the instructor would handle the described incident or how policy prescribes the incident be handled. This ideology does not promote free-thinking or allow the student to analyze or attempt to consider alternative solutions. This mode of training is well structured to create the warrior who will charge a hill or go blindly into a situation occupied by an enemy. It does not facilitate an officer's ability to think through an ever-changing incident (Vander Kooi & Palmer, 2014).

The use of scenario based training and de-escalation techniques has been shown to greatly reduce use of force incidents, as shown in a study by Oakland, CA Sheriff's Department (Police Executive Research Forum, 2015). After implementing a progressive scenario based training where officers were placed in scenarios that would cause them to continually assess the threat, or problem, and work out a proper solution, there has been a substantial reduction in officer involved shootings, use of force incidents, and complaints against officers. Use of force incidents declined from 1,200 incidents in 2010 to 606 incidents in 2014. Complaints against officers dropped from 2,593 in 2012 to 1,067 in 2014. Officer involved shootings also experienced a decline, from 8 in 2011 to 0 in 2014 (Police Executive Research Forum, 2015, p. 55). While the Oakland Sheriff's Department had already been utilizing scenario based training in the past, they modified the training to include scenarios that would have the officer use various skill sets to address the problem instead of restricting the outcome based on the officer's actions, or lack thereof (Police Executive Research Forum, 2015).

RECOMMENDATION

The effects of the sympathetic nervous system is well documented through several different types of research. Much has been written to explain how the body will react when placed in a situation that poses a threat to that person. The problem in the past has not been with the information but with how the information is relayed to the officer. Instructors must have an understanding of the effects and build the training around the decision making process when a person is under this type of stress and reacting to the event. Instruction should be developed in stages, with each stage more intense and challenging than the last. Additionally, a variety of solutions to a problem or variety of possible outcomes should be present; they should rely on the trainee's experience or exposure to the environment they are training in while being careful to not overwhelm the trainee with too many options.

The instructor's role in training for events that activate the sympathetic nervous system is imperative; not only must they train to confront the person, but they must also train in such a way as to mitigate the effects of what is naturally occurring in the officer's body. The instructor must not only convey techniques for dealing with the threat, but they must research and develop techniques that will work within the parameters of the activation of the sympathetic nervous system. When teaching a skill within a limited time frame, time management is crucial if the skill is to be taught where a trainee will be confident in the success of the technique. Trainees should not be taught in a static environment because they do not work in one, nor will they be facing a static person in an incident.

Training should be a three-step process where the trainee is taught the information along with practical uses for the information and its limitations. The trainee should then be taught in an environment where they are moving methodically through the information with attention to details. Furthermore, the trainee should be put through a series of increasingly difficult scenarios with another instructor or an instructor monitored participant. All scenarios should be designed so that if the officer completes it with the information provided, he/she will be evaluated as a success. Instructors need to teach in a manner that would encourage visualization so the student can visualize each step of the process, or scenario. This process will allow them to practice a response mentally and further increasing the trainee's chance of success. Trainees should to be taught breathing techniques that have been proven to reduce one's heart rate and to slow the effects of the activation of the sympathetic nervous system. By utilizing scenario based training in a secure environment and allowing officers to problem solve and communicate during an incident, law enforcement agencies will help their officers gain the ability to both think and react when presented with a critical stress incident.

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